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INDIA'S LABOUR MARKET

A NEW EMPHASIS ON GAINFUL EMPLOYMENT



DISCUSSION PAPER
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CONTENTS

In brief

Introduction

Page 3

1. Labour market trends: what the data tell us—and what they don't

Page 4

2. The global forces affecting labour market dynamics in India

Page 10

3. Creating opportunities for more gainful employment: Solution spaces

Page 21

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India's labour markets are experiencing structural change, but there is a dearth of reliable data to capture these shifts. The debate tends to focus narrowly on the pace of job creation, which itself could be measured more frequently and accurately. We see the need for a new emphasis on the notion of "gainful employment" for India's workforce of 460 million that focuses on improved quality of work and the income derived from it. Gainful employment covers a range of issues, including the quantity and type of work done by people already in employment, growth in labour productivity, higher earnings, and aspects of work quality such as safety, cleanliness, flexibility, income security, and intellectual challenge.

- Surveys showing a three-percentage-point decline in India's overall labour force participation between 2011 and 2015 should not take focus away from the structural shift from agriculture towards the non-farm sector, particularly construction, trade, and transport. During this period, agriculture shrank by 26 million while non-farm jobs rose by 33 million, largely driven by rapid economic growth between 2013 and 2015. More recent trends in aggregate employment cannot be derived from the quarterly enterprise studies available, highlighting the data deficit.
- Labour force participation and the number of employed people do not in themselves measure gainful employment. Declining labour participation may indicate that more young people have stayed in education and/or that more women from households which were once in extreme poverty but have now entered the middle class no longer need to work in low-productivity jobs. Likewise, supplementary income opportunities (such as additional days of work on a construction project or selling home produce through a digital platform) may not increase the number of jobs, but they may raise the income level, choice, flexibility, and security of an underemployed worker engaged in low-productivity work.

- Global trends affecting economies around the world pose challenges to labour but also lead to more opportunities for gainful employment. Three are particularly relevant to India:
 - To bridge India's infrastructure gaps, the government has raised public investment in roads, railways, rural development, power, telecom, housing, and "soft" areas of health care and education, creating work opportunities for an estimated seven million workers, at wages that are 70 percent higher than for average farm workers. In addition to creating jobs, there is some evidence of investment in power and roads infrastructure triggering growth in the non-farm economy in key states.
 - Rapid advances in automation technologies are affecting India's information technology and business process outsourcing sectors. These sectors have remained net job creators, and the industry estimates that companies could hire up to 2.5 to three million more workers by 2025, provided they can acquire the skills to meet changing needs.
 - The global rise of independent work and microentrepreneurship, aided by new digital ecosystems, is mirrored in India, where they are providing new work opportunities with better pay and links to organised value chains, including in parts of the country less covered by formal labour markets. Our initial estimates are that the rapidly growing sectors of cab-hailing platforms, e-commerce, digital financial services through networks of banking correspondents, and lending for microentrepreneurship and self-help groups have improved income opportunities for 18 to 22 million workers in about the past three years.
- India needs to collect more frequent, timely, and relevant labour market data to understand trends in gainful employment. Government could help stimulate the creation of gainful employment through targeted programmes and by further removing hurdles that block private investment and innovation. Business and policy makers can work together in areas such as boosting growth in the labour-intensive tourism sector, unlocking the digital economy's potential to create work opportunities, and reskilling of the workforce.

INTRODUCTION

India has delivered strong economic growth relative to many other countries in the past few years, but there are concerns about whether the growth has been inclusive or whether the country is heading for jobless growth. Data from India's Labour Bureau on employment creation suggest that fewer than two million jobs are being created annually, a seemingly dire situation in a country where the working age population grows by some 16 million every year.¹ In reality, much of the discussion around jobless growth is not founded on robust data or analysis; indeed, there is a dearth of reliable and timely data on this topic. More fundamentally, we believe the debate around the pace of job creation is a narrow one that does not reflect the labour market goals India should set for itself.

This discussion paper seeks to reframe the debate around a more holistic goal for India—that of creating opportunities for “gainful employment” for the workforce. Gainful employment is about quality, not just quantity. It implies not only the creation of jobs, but the creation of more fulfilling and better-paying jobs that are more productive and that mean an enhancement in work “quality” (a term we use to describe other aspects of work desired by the labour force, such as safety, cleanliness, flexibility, income security, skills, and intellectual stimulation). These aspects of work are important objectives for an economy that seeks to deliver inclusive growth and meet the aspirations and expectations of its workforce of 460 million.²

Our discussion in this paper is divided into three sections. The first reviews trends in labour market data over the last four years and the extent to which existing measurement tools capture—or fail to capture—essential elements of gainful employment. The second section focuses on global trends such as automation and the rise of independent work that have been affecting India in a more intense way in the recent past, and that have important implications for efforts to stimulate gainful employment. The third and final section outlines some measures that policy makers and business could consider as ways to enable and enhance both measurement and creation of more gainful employment.

Gainful employment as an issue is by no means limited to India. The International Labour Organization (ILO) launched a campaign focusing on “decent work” in 1999.³ Quality of work was a theme institutionalised as part of the European Union's Lisbon Treaty in 2000, which included the goal of “sustainable economic growth with more and better jobs”.⁴ Yet gainful employment remains an elusive objective in many parts of the world. Research by the McKinsey Global Institute has shown that beyond the unemployment rate, questions relating to quality of work, such as skill levels, productivity, and income advancement, can be potent and sometimes politically corrosive ones in advanced economies at a time when labour market dynamics are shifting.⁵ Moreover, the trends we outline in this discussion paper, such as the push to fill the infrastructure deficit, the advent of automation, and the growing

¹ The issue has been widely covered in the Indian press, for example, “In search of a job”, *Hindu Business Line*, April 10, 2017.

² While our focus in this paper is a relatively narrow look at employment in India, international economists have also been seeking to reassess standard and widely used global metrics such as GDP, which some regard as a limited indicator of economic performance and social progress. See, for example, Joseph E. Stiglitz, Amartya Sen, and Jean-Paul Fitoussi, *Report by the commission on the measurement of economic performance and social progress*, 2009, <http://ec.europa.eu/eurostat/documents/118025/118123/Fitoussi+Commission+report>.

³ Juan Somavia, then director general of the ILO, stated that “the primary goal of the ILO today is to promote opportunities for women and men to obtain decent work and productive work in conditions of freedom, equity, security, and dignity”. *Decent work: Report of the director general*, ILO, June 1999.

⁴ *Presidency conclusions, Lisbon European council, March 23 and 24, 2000*, European Parliament, www.europarl.europa.eu/summits/lis1_en.htm.

⁵ Market incomes from wages and capital stagnated or fell for about two-thirds of households in the United States and some Western European countries from 2005 to 2014, and MGI research found that this coloured the political views of many of those affected, arousing hostility to free trade and migration. *Poorer than their parents: Flat or falling incomes in advanced economies*, McKinsey Global Institute, July 2016.

importance of digital ecosystems and independent work, are challenging labour markets around the world while also creating new and better opportunities.

While this discussion paper addresses these issues as part of a focus on gainful employment, it does not aim to provide a complete assessment of job creation in the Indian economy or a comprehensive strategy for the future.

1. LABOUR MARKET TRENDS: WHAT THE DATA TELL US—AND WHAT THEY DON'T

SOME MACROECONOMIC CONTEXT

India's economy grew at an average of about 6.6 percent per year between 2011 and 2017. Multiple stresses and strains, such as a rising fiscal deficit, high consumer inflation, the collapse of the mining sector, and a logjam in infrastructure projects, led to a macroeconomic slowdown from 2011 to 2013, when GDP growth fell to an average of 5.6 percent per year. From 2013 to 2017, growth recovered to 6.9 percent per year, making India one of the fastest-growing major economies in the world, although still below its potential and aspirational growth of more than 9 percent per year.

The gradual economic recovery since 2013 has been aided by the government's reining in the fiscal deficit and moderating inflation, rapidly expanding public investment in the infrastructure sector, and implementing large-scale programmes to bring basic services such as bank accounts, sanitation, and clean energy to India's unserved millions. At the same time, in a sometimes difficult international economic context, private-sector investment has grown slowly, and bank credit expansion has been hampered by the legacy of distressed loans. The decision to "demonetise" large-denomination banknotes, announced in November 2016, has affected the cash-dependent informal sector, real estate, and consumption-oriented businesses while also leading to a surge of digital payments. In the months ahead, India is bracing for another significant change: the long-awaited rollout of the Goods and Service Tax, which will unify indirect tax rates across the country, force massive digitisation of invoices, and enable the development of more efficient logistics networks.

RECENT LABOUR MARKET TRENDS

Through these eventful times, India's Labour Bureau has been releasing quarterly enterprise surveys measuring net employment growth in select sectors.⁶ From 2013 to 2016, these surveys suggested that India's labour market had meagre job growth in the range of 150,000 to 400,000 jobs each year. The surveys have captured headlines, but the samples they cover are small, and conclusions about aggregate national trends derived from them may not be accurate. The expanded sample covers about 81 percent of enterprises with more than ten employees, which sounds like a substantial proportion. However, since most enterprises in India are smaller in size, in reality the sample represents only about 1.4 percent of all enterprises in the country, accounting for 21 percent of non-farm employment.⁷ It is difficult to reconcile the job growth estimates from the quarterly enterprise surveys with those from the Labour Bureau's much larger annual household surveys, which cover some 100,000 to 150,000 households. Accordingly, we focus this section on the annual Labour Bureau household surveys.

⁶ The surveys can be found on the Labour Bureau's website, <http://labourbureau.nic.in/>. Until 2015, the surveys reflected data gathered from 2,000 enterprises in textiles, leather, metals, automobiles, gems and jewellery, information technology, and transport. In 2016, the survey was expanded to cover 10,000 enterprises across manufacturing, construction, trade, transport, education, health, hotels and restaurants, and information technology and business process outsourcing.

⁷ Sixth economic census, 2013–14.

The employment and unemployment surveys conducted by the Labour Bureau over the last four years are a fairly robust set of sample surveys. We analyse the annual data from them based not on their publication dates but on the reference period for which the data were collected in each round, to more closely map labour market trends to economic trends happening at the same time.⁸ The data are available only up to 2015 (the financial year that most closely maps to the reference period of the most recent annual Labour Bureau survey of 2015–16). Details of the key labour market data sources and how we have mapped Labour Bureau surveys to corresponding financial years are detailed in Exhibit 1.

Exhibit 1

Multiple agencies track employment and unemployment in India

Main surveys and reports					Population covered and methodology used	Sample size of the last round
Agency	Survey name	Frequency	Survey unit	Focus		
National Sample Survey Organization	Employment and unemployment	Quinquennial	Households	Overall level and structure of employment and unemployment in India	Entire population covered via random sampling	100,000 households
Labour Bureau	Annual employment/unemployment survey	Annual	Households	Overall level and structure of employment and unemployment in India	Entire population covered via random sampling	150,000 households
	Quarterly report on changes in employment in the selected sectors	Quarterly ¹	Establishment units	Change in employment of selected export-oriented and labour-intensive sectors following the global economic slowdown	Pan-India coverage via 2-stage stratified sampling	1,936 enterprises
	Quarterly report on employment scenario	Quarterly	Establishment units	Employment trend in non-farm industrial economy having >10 workers	81% of all employment units having >10 workers via fixed panel method	10,600 enterprises

Survey and reference year mapping of annual Labour Bureau survey				
Year of report release				
	2011–12	2012–13	2013–14	2015–16
Survey period	July 2011 to January 2012	October 2012 to May 2013	January 2014 to July 2014	April 2015 to December 2015
Reference period	July 2010 to June 2011	Moving 12-month reference period (covering October 2011 to April 2013)	Moving 12-month reference period (covering January 2013 to June 2014)	Moving 12-month reference period (covering April 2014 to November 2015)
Financial year to which we map it	2011 (i.e., 2010–11)	2013 (i.e., 2012–13)	2014 (i.e., 2013–14)	2015 (i.e., 2014–15)

¹ Discontinued post 2015.

SOURCE: National Sample Survey Organization and Labour Bureau; McKinsey Global Institute analysis

⁸ The relevant surveys appear on the Labour Bureau's website, <http://labourbureau.nic.in/>. The reference period for the full year runs from April of one year to March of the following year.

Based on the annual surveys, the total number of jobs in India from 2011 to 2015 grew by about seven million, from 455 million to 462 million. But the apparent sluggishness in job creation disguises significant structural change: agricultural employment fell by 26 million and non-farm employment rose by 33 million, or by more than eight million jobs a year. In fact, the pace of non-farm job creation dipped during the economic slowdown years of 2011 to 2013 to as low as eleven million, and rose sharply to 22 million during the following two years. Labour moved out of agriculture into construction, trade and hospitality, and transport, the mainstays of the non-farm labour market in many developing countries; these three sectors generated 36 million jobs from 2011 to 2015. By contrast, mining and manufacturing lost jobs during the slowdown, although manufacturing jobs seem to have grown between 2013 and 2015. The growth in non-farm jobs in India is also evident in the growth in number of Employees Provident Fund members. Membership grew at a 7 percent rate, from 32.6 million in 2013–14 to 37.6 million in 2015–16, and currently stands at 45 million.⁹

Job growth in transport and trade was significantly faster than average India employment growth. The construction sector added many lower-productivity jobs, however, so GDP growth for the sector was lower than average national growth. Exhibits 2 and 3 show sector-level growth in employment and its comparison with GDP growth in each sector.

Exhibit 2

The rise in non-farm jobs between 2011 and 2015 has more than compensated for the decline in farm jobs

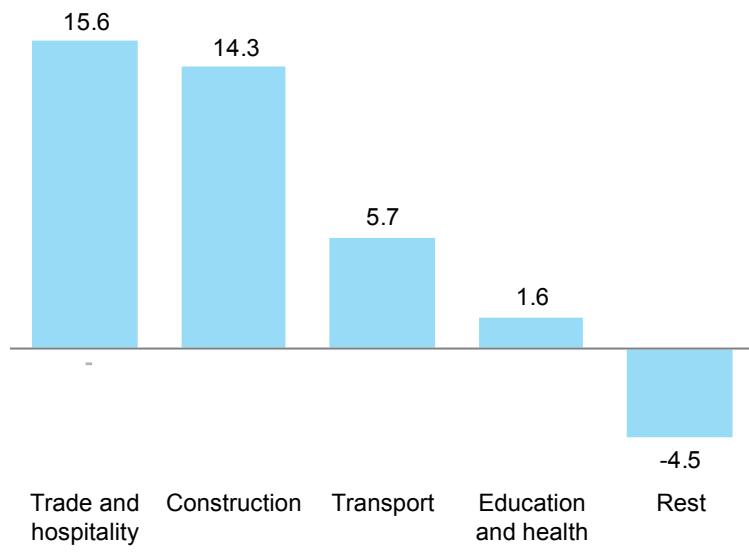
Million

Employment

■ 2011–13 ■ 2013–15



Top four sectors' contribution to non-farm jobs between 2011 and 2015



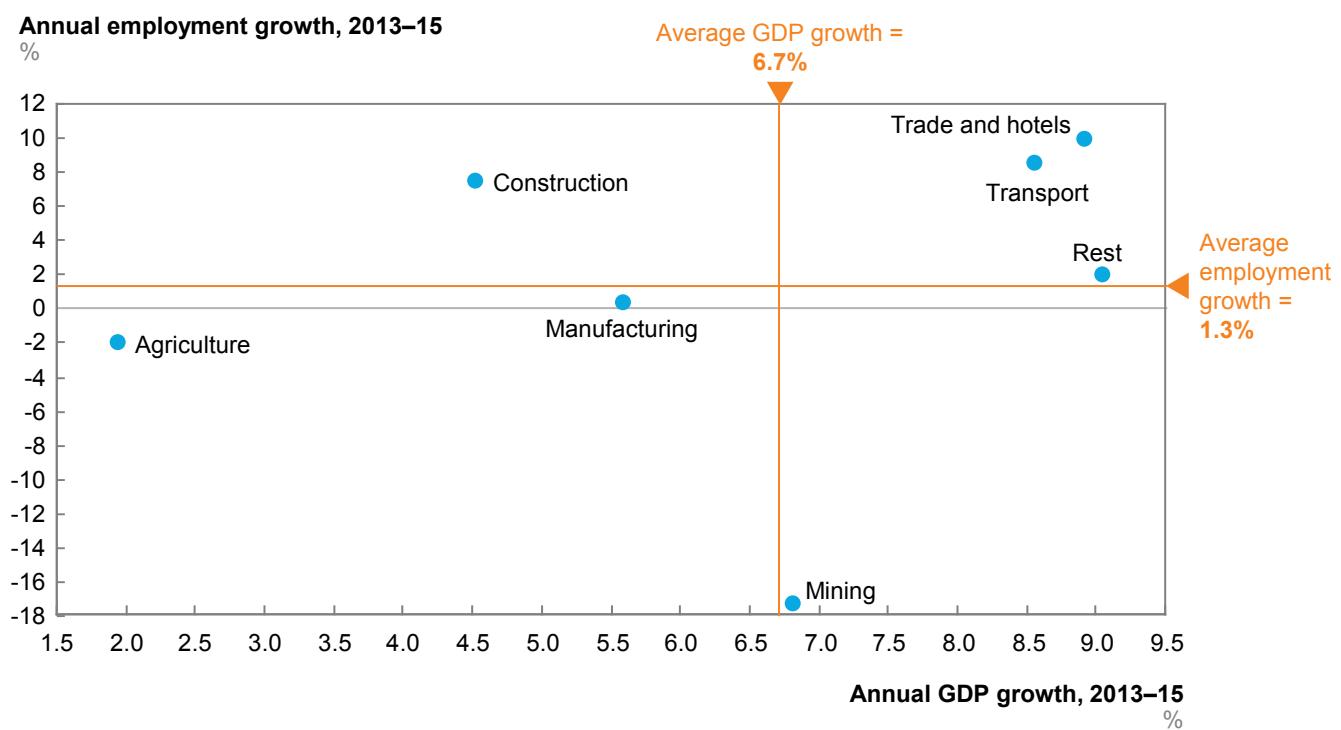
NOTE: Years are financial years from April to March; thus 2011 is FY2011, from April 2010 to March 2011. Numbers may not sum due to rounding.

SOURCE: Labour Bureau; UN Population Division (medium variant); McKinsey Global Institute analysis

⁹ Employees Provident Fund Organisation, India.

Exhibit 3

Growth in non-farm employment was relatively strong from 2013 to 2015



NOTE: Years are financial years from April to March; thus 2013 is FY2013, from April 2012 to March 2013.

SOURCE: Labour Bureau; Central Statistics Office; McKinsey Global Institute analysis

Despite the growth of non-farm employment, India's overall labour force participation rate (the share of the working-age population looking for work) fell by three percentage points, from 55.4 percent in 2011 to 52.4 percent in 2015. In fact, the bulk of this decline (from 55.4 to 53.1 percent) was recorded during the two rounds that collected data for the years 2011 and 2013. Such a steep change in a structural metric like labour force participation rate in a two-year period should be investigated further, including testing for the robustness of the sample. At any rate, the movement of workers from farm to non-farm jobs has not been rapid enough to account for growth in the working-age population. At the next level, the labour force participation rate for urban males appears to have dipped the most, from 73.7 to 69.1 percent over the period, according to the official surveys.

LIMITATIONS OF STANDARD DATA AND ASSESSMENT FRAMEWORKS

Current sources of data fulfil their main purpose of assessing some labour market trends, particularly labour force participation rate and employment shifts, but are not really designed to assess the wellbeing of the workforce or the extent of change in gainful employment. These data limitations existed in the past, too. However, as we will see in the next section, they assume particular significance in the light of global trends—also mirrored in India—that favour more independent work, flexible or part-time jobs, and supplementary income generation activities which are not captured by surveys and frameworks currently.

We highlight a few significant limitations.

- **Declining labour force participation rates need not indicate slowing growth in gainful employment:** The surveys measure the labour force participation rate, or the share of people willing to work and looking for work. This is a useful metric to understand how a population chooses to approach working vs. other ways to spend time (for example, in education, unpaid care work, or leisure), but a declining participation rate by itself is not necessarily a sign of deteriorating labour market dynamics. The labour force participation rate is affected by multiple factors, such as age, education, income, job opportunities, and cultural attitudes. India's participation rate has fallen in past decades as more young people have stayed in the education system to acquire higher skills rather than entering the labour force at the age of 15.¹⁰ This is a healthy trend. Similarly, declining female participation may actually be a sign of higher income security in some cases: the labour force participation rate of women is highest in low-income households that combat extreme poverty, and the first sign of entering the middle class is often for the woman of the household to withdraw from poor-quality work.¹¹ Yet it is unclear if demographic and income changes can explain movements in the participation rate over a year or two. Recessionary conditions can lead the participation rate to dip, but even this may happen only over a longer time or under extreme economic stress. For example, during the financial crisis in the United States, the share of discouraged workers rose from 0.4 percent to only 0.9 percent between the first quarter of 2008 and the first quarter of 2009.¹²
- **The unemployment rate is not very meaningful in the context of a large informal sector:** The surveys suggest that, of those in the labour force, nearly everyone finds work, with a steady 4 percent unemployment rate throughout the last four years. This is natural in India's context where unemployment is not really an option, while entering the informal sector as a worker is the norm. Some 86 percent of India's workforce is employed in the informal sector, and more than 90 percent is in informal employment.¹³ Rarely would a poor rural boy who had dropped out of school remain "unemployed"—he would typically be put to "work" on his family's small piece of land or would lend a hand at the local kirana shop owned by his uncle. While both of these positions qualify as jobs and add to the employment measured by labour market surveys, they may not reflect whether the worker is gainfully employed.
- **Being employed disguises the slack of underemployment:** The headline number of jobs created according to these surveys does not help us assess growth in the amount of work done (or so-called man-days or man-hours actually worked).¹⁴ A person who engages in ten months of work is on a par with one who has engaged in seven months of work during the 12-month reference period. In its recent annual surveys, the Labour Bureau has attempted to focus on this issue by classifying workers who sought 12 months of work into four categories (those who found work for 12 months, six to 11 months, one to five months, and less than one month). By this measure, some 65 percent of those seeking full-time work through the year found it. However, the rest did not, and any increase in the number of days or hours such people worked would result in rising gainful employment, although not in new job creation.

¹⁰ *The world at work: Jobs, pay, and skills for 3.5 billion people*, McKinsey Global Institute, June 2012.

¹¹ *The power of parity: Advancing women's equality in India*, McKinsey Global Institute, November 2015.

¹² "Ranks of discouraged workers and others marginally attached to the labor force rise during recession", Issues in Labor Statistics, US Department of Labor, April 2009.

¹³ The informal sector is defined as unincorporated enterprises with fewer than ten workers; informal employment is defined as workers without any employment security or employer-provided social security.

¹⁴ Data on India's national rural employment guarantee scheme are a notable exception as they track details of person-days of work achieved by household and type of worker under the programme.

- **Trends in the labour force participation rate and unemployment do not reflect social or economic mobility:** An essential question is whether economic growth is creating upward social mobility (or the upward movement of individuals and households between socioeconomic strata). Social mobility can be assessed only if longitudinal studies are done with the same set of respondents, such as a panel, to track year-on-year trends in the gainful employment of a given sample of workers. For instance, these studies would ask workers how they spend their time, how much work they do, how much they earn, how their standard of living has changed, and how satisfied they are with various aspects of their work. In the absence of longitudinal data, researchers try to assess proxies, such as the returns to work by each cohort of workers (for example, average income earned by high school dropouts) or the type of work done by each cohort (for example, casual labour or self-employment).
- **The sector split of employment does not fully capture underlying product and labour market shifts:** Labour market surveys tell us how many workers are employed in each sector, but with some limitations. First, the share of workers classified as being employed in agriculture may be an overestimate of the actual time spent in agriculture; in reality, workers in India move fairly seamlessly from agricultural work to non-farm work (such as construction, retail trade, light manufacturing, and community or personal services) depending on the season, the economic cycle, and personal circumstances. A significant portion of the informal workforce is employed in more than one sector through the year. The sector classifications in labour market surveys reflect the majority of work, but the shift from one sector to another may not be binary. Second, job classifications depend on the primary sector in which the employer-enterprise is classified, not that of the occupation or work content of the worker. This means that jobs classified as manufacturing may, in reality, have high services content (for example, design, marketing, finance, human resources, security, cleaning, and maintenance). The disaggregation of value chains globally as well as in India means that more and more specialist firms undertake these functions on behalf of manufacturing firms. This by itself would reduce the share of manufacturing employment as recorded in labour market surveys.
- **The survey conclusions are not easy to interpret:** Interpretation is challenging because there is a lag. The annual labour market surveys involve a six-month data collection phase, in which respondents are required to describe their labour market status in the preceding year. In effect, we may analyse data with a 12- to 24-month lag. The latest data available at this point, in 2017, pertains to the annual survey published in 2015–16, which reflects labour market trends in the financial year 2014–15. Moreover, more could be done to improve the clarity of survey findings, even at a basic level of estimating the total number of jobs created in the economy, or relating this to corroborating evidence, such as macroeconomic and sector growth trends.

We conclude that the creation of non-farm jobs and shift of work away from agriculture—*itself* an aspect of the move to gainful employment—is a structural trend in India that has been aided by a period of relatively strong economic growth. However, there is a paucity of timely and reliable labour market data, with virtually none currently available after the reference period of 2015. Furthermore, the available data do not enable us to obtain a clear picture of shifts in the wellbeing of India’s workforce. To look for more clues and pointers to how gainful employment is evolving in the Indian economy, we move to examining more recent disruptions and their potential impact on employment and income opportunities.

2. THE GLOBAL FORCES AFFECTING LABOUR MARKET DYNAMICS IN INDIA

We focus on three forces that have been particularly relevant in shaping the workforce landscape over the past few years: urbanisation and the need to bridge infrastructure gaps, automation and knowledge-intensive work, and new digital ecosystems and independent work. These are not unique to India—they mirror trends in other parts of the world—but government policy and action in the past few years has provided an impetus to some of them. In each case, we provide an overview of how the trend is affecting global labour markets and then some directional evidence of how labour markets in India are changing as a result of them.

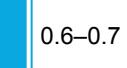
We estimate that a combination of increased government spending, additional IT hiring, the rise of independent work, and an increase in entrepreneurship created gainful employment for between 20 million and 26 million people between 2014 and 2017 (Exhibit 4). This estimate is not a watertight one for net job creation in India. Rather, it is illustrative of how gainful employment opportunities can be enhanced by these broader global themes, as India shifts from agriculture and towards construction, trade and transport, and other services.

Exhibit 4

Increased government spending, rise of independent work, and entrepreneurship have boosted gainful employment for 20 million–26 million people

Incremental jobs, 2014–17
Million

 Low estimate  High estimate

	Key levers		Rationale
Infrastructure and urbanisation	Central Government spending	 1.5–2.5	Direct job creation through increased government expenditure within prioritised sectors (roads, railways, health, housing, etc.)
	MGNREGA ¹	 0.6–0.7	190 million incremental man-days of work in rural areas translating into 0.6 million–0.7 million full-time additional employment ²
Automation and knowledge-intensive work	IT/BPO	 0.6	Increased hiring by India's IT and business process outsourcing from higher spending by clients in developed countries
	Tech-enabled jobs	 0.7–0.9	Independent work created in diverse sectors such as transport, logistics, and financial services
New digital ecosystems and independent work	MUDRA loans ³	 15.0–19.0	MUDRA loans to 13 million new entrepreneurs, employing 0.2–0.5 persons per enterprise
	Self-help group lending	 2.0–2.5	Loans to 2 million–2.5 million self-help groups, affecting at least 1 member per group
	Total	20 million–26 million	

¹ Mahatma Gandhi National Rural Employment Guarantee Act.

² Assuming 300 working days in a year.

³ Micro Units Development and Refinance Agency Bank. Data from MUDRA pertains only to loans disbursed during the year, and does not reflect the longer-term viability of businesses to which these loans were made.

NOTE: Incremental job totals do not account for offsetting job reductions. Some overlap in each category is possible. Incremental jobs could amount to additional work for current labour force rather than new workforce participants. Income generated by each of the categories cannot be concluded. Numbers may not sum due to rounding.

SOURCE: McKinsey Global Institute analysis

INFRASTRUCTURE AND URBANISATION

The global perspective

The world today invests some \$2.5 trillion a year in transport, power, water, and telecommunications systems, yet it is not enough, and the needs are only growing steeper. The McKinsey Global Institute has estimated that the world needs to invest an average of \$3.3 trillion annually from 2016 to 2030 simply to keep pace with economic growth forecasts, and emerging economies including India will account for some 60 percent of that need.¹⁵ Urbanisation is creating the need for investment in critical areas such as transport, water treatment, and power grids in countries around the world. If these gaps continue to grow, they could erode future growth potential and productivity.

Affordable housing is an especially acute need. In total, an estimated 200 million urban households in Asia, Africa, and Latin America are ill-housed and live in slums. If current trends in urbanisation and income growth persist, by 2025 the number of urban households that live in substandard housing—or are so financially stretched by housing costs that they forgo other essentials, such as health care—could grow from 330 million to 440 million. This could mean that the global affordable housing gap would affect one in three urban dwellers, or about 1.6 billion people.¹⁶

The Indian perspective

India acutely feels the infrastructure deficit, and the government has moved to close funding gaps. Central government spending (both revenue and capital expenditure) on prioritised sectors rose by 1,080 billion rupees (\$17 billion), or 55 percent, between 2014 and 2017, when total spending reached 2,991 billion rupees (\$46 billion).¹⁷ Spending was focused particularly on roads, railways, housing, and rural development, as well as in telecom and power, and “soft” infrastructure, such as education and health care (Exhibit 5).¹⁸ Based on average revenue per labour benchmarks in each sector, we estimate that central government spending could translate to employment opportunities for some 6.6 million workers in 2017 (excluding the impact of the Mahatma Gandhi National Rural Employment Guarantee Act, or MGNREGA), or some two million more compared to the level in 2014. A large share of these jobs are in the construction sector, where an average worker earns 70 percent more than an average farm worker, so this trend is good from a gainful employment perspective.

In addition to increased central sector expenditure, direct jobs have also been created through increased spending by states. They spend almost 30 percent more than central government, with a higher share allocated to capital expenditure.¹⁹ Their spending on education, health, and family welfare is also disproportionately higher. More recently, the states’ expenditure has been further boosted by the increased devolution of central taxes.²⁰

A further boost to work opportunities has come with the government’s renewed commitment to MGNREGA since 2015. In addition to enhancing income security in rural areas, this programme aims to build rural infrastructure, such as rural connectivity, water conservation, and land development. Using data from the programme’s website, we

¹⁵ In constant 2015 prices. *Bridging global infrastructure gaps*, McKinsey Global Institute, June 2016.

¹⁶ *A blueprint for addressing the global affordable housing challenge*, McKinsey Global Institute, October 2014.

¹⁷ US dollar conversion at June 2017 rates. Spending excludes central government expenditure to implement the Mahatma Gandhi National Rural Employment Guarantee Act.

¹⁸ *Union budget 2015–16 and 2017–18*, Government of India, <http://indiabudget.nic.in/index.asp>.

¹⁹ The top 17 states accounting for roughly 80 percent of total states’ expenditure spent 15.6 percent of their expenditure on capital expenditure, vs. about 14 percent for central government. Aravind Gayam and Vatsal Khullar, *State of state finances*, PRS, October 2016.

²⁰ The 14th Finance Commission, in February 2015, recommended that the proportion of the central pool of taxes devolved to states should be increased from 32 percent to 43 percent. Between 2012 and 2017, expenditure of states grew at an average rate of 20.6 percent annually, almost twice that of the central government expenditure.

estimate that it has created an additional 690 million man-days of work in 2017 compared to 2015.²¹ Assuming a full-time equivalent job is 300 man-days, this is roughly equal to adding 2.3 million jobs, though in reality, each beneficiary gets about 46 man-days of work, which translates into a total of 51.2 million beneficiary households in 2017, or 10 million more than in 2015. While most of this work may not qualify as a new job (it is considered time spent by an existing daily-wage agricultural worker in construction activities that earns her a wage), it yields income gains that contribute directly to improved wellbeing. Programmes like JAM (Jan Dhan-Aadhaar-Mobile, which gives people access to banking and payments through low-balance bank accounts, Aadhaar-based authentication, and mobile-based payment services) are being implemented to pay wages directly to bank accounts, thereby raising worker bargaining power and contributing further to worker wellbeing. Almost 96 percent of wage and material payments are electronically credited into workers' accounts, according to the Ministry of Rural Development.²² This has resulted in obvious efficiencies in reducing cost and plugging leakages. Consequently, administrative expenditure has fallen as a percentage of total expenditure from 6.1 percent in 2013–14 to 4.8 percent in 2016–17. A study found that leakage in MGNREGA allocation has fallen by more than 12 percent when payment is made electronically.²³ While evidence about outcomes in terms of asset creation as a result of MGNREGA is less conclusive, the pace of work completed has gained momentum, rising from 2.7 million in 2014 to 6.1 million in 2017.²⁴

As India's economy continues to grow at 6.5 to 7 percent per year or more, there is room for greater private-sector investment to start flowing into infrastructure, and this could provide an impetus for labour to continue moving into construction. The government's "Housing for All" programme, if well implemented, could provide a further boost.²⁵ But construction work is becoming more skill intensive, and India's workforce is short of these skills. Sustaining benefits for workers will mean boosting the supply of job-ready skills matched to the types in demand.

²¹ Mahatma Gandhi National Rural Employment Guarantee Act 2005, Ministry of Rural Development; www.nrega.nic.in/netnrega/home.aspx.

²² *Sustainable rural development: A three years' journey*, Ministry of Rural Development, 2017.

²³ Karthik Muralidharan, Paul Niehaus, and Sandip Sukhtantar, *Building state capacity: Evidence from biometric smartcards in India*, UCSD working paper, February 2016.

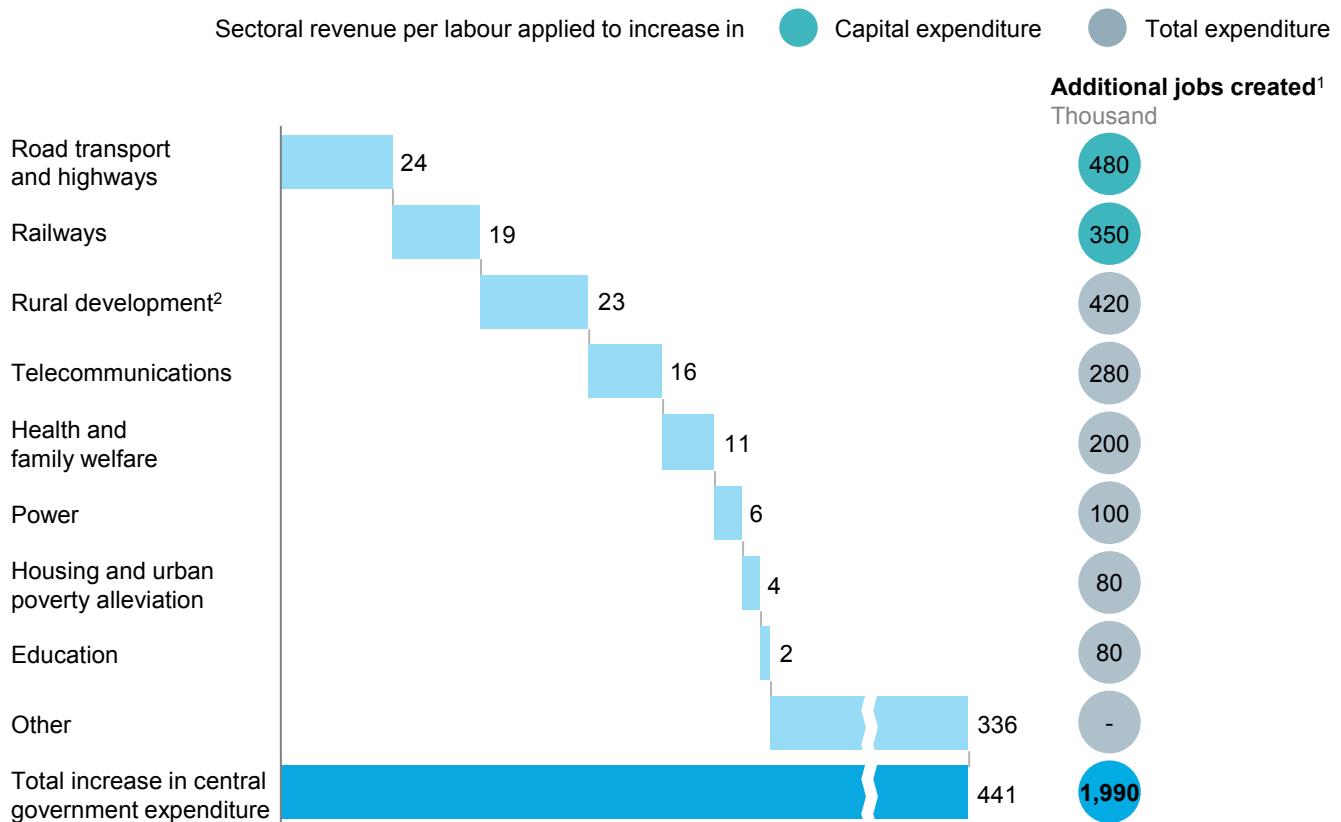
²⁴ MGNREGA website

²⁵ The scheme aims to provide improved housing for low-income households through slum rehabilitation, promotion of affordable housing through credit-linked subsidies, public-private partnerships, and other measures. It aims to address a total housing shortage of 20 million units by 2022.

Exhibit 5

Increased expenditure by central government in prioritised sectors has led to about two million new jobs

Increase in total central government expenditure, 2017 over 2014
10 billion INR



1 Using sectoral revenue per labour with increase in central government's total expenditure for the sector. Sectoral revenue per labour is applied to increase in central government's capital expenditure for the period for road transport and highways and railways.

2 Excludes increase in central government expenditure on MGNREGA of INR 145 billion.

NOTE: Years are financial years from April to March; thus 2011 is from April 2010 to March 2011. Numbers may not sum due to rounding.

SOURCE: Union budget 2015–16 and 2017–18, Government of India; McKinsey Global Institute analysis

A “night lights” view of India highlights the rapid recent shifts from a farm to a non-farm economy and increased development

Building infrastructure, while creating jobs, can also have a lasting positive impact on productivity and income of enterprises. To explore this, we look at global images of the Earth at night, released by the National Aeronautics and Space Administration. They provide a clear composite view of patterns of human settlement over the past few years. John Nelson of ESRI transformed images from 2012 and 2016 and converted them into a “net” picture, in which areas which have improved in brightness (relative to 2012) are highlighted in green, while those that have become duller are highlighted in purple. (Exhibit 6).²⁶

While most of India has brightened over this time period on average, some states including Uttar Pradesh, Bihar, Chhattisgarh, and West Bengal stand out for the significant improvement in their “night lights” image. Some patterns stand out. States such as Uttar Pradesh and Bihar experienced increased brightness in most areas, whereas in Odisha and Chhattisgarh brightness seems to have improved in select pockets. While the former may be driven primarily by rural areas gaining improved access to electricity, the latter may be more driven by urbanisation around major cities, like Raipur in Chhattisgarh. Improvement in brightness is explained by easing of supply side constraints, such as electricity availability, together with increased willingness and ability of inhabitants to use power. Residential usage presumes affordability. In a modern economy, production and trade go hand in hand. As different areas become connected, this drives production and trade. This virtuous cycle shifts economic activity from farm to non-farm, increasing income, and leading to improved affordability. While this is an oversimplification of the process of investment build-out and economic growth, it nonetheless captures some of its major contours.

We sought to understand the broad reasons for this improved brightness for select states, using the dynamics described above. A look at the annual growth in electricity availability (supply) between 2014 and 2017 at the state level confirms that, while availability has increased by 6 percent at an all India level, the observed growth was 19 percent for Bihar, and close to 9 percent for states such as Uttar Pradesh and Chhattisgarh.²⁷ This improved supply is manifested in the intensive electrification of a large number of villages.²⁸ For example, during this period, 126 villages per 1000 sq. km in Bihar and 63 villages per 1000 sq. km in Uttar Pradesh were intensively electrified. The push on electricity was complemented by building of road infrastructure, such as rural roads. Bihar built 150 km of rural roads and Odisha close to 90 km per 1000 sq. km (Exhibit 7). As a result, a significant number of these states have observed a very sharp movement away from a farm to a non-farm economy; Bihar’s share of non-farm economy, for example, rose by more than 8 percent, while Uttar Pradesh’s share increased by close to 4 percent during the 2013–16 period. By comparison, the all-India share increased by about 2 percent.

²⁶ The images can be viewed on the NASA website: <https://www.nasa.gov/sites/default/files/thumbnails/image/india-2012.jpg>, <https://www.nasa.gov/sites/default/files/thumbnails/image/india-2016.jpg>

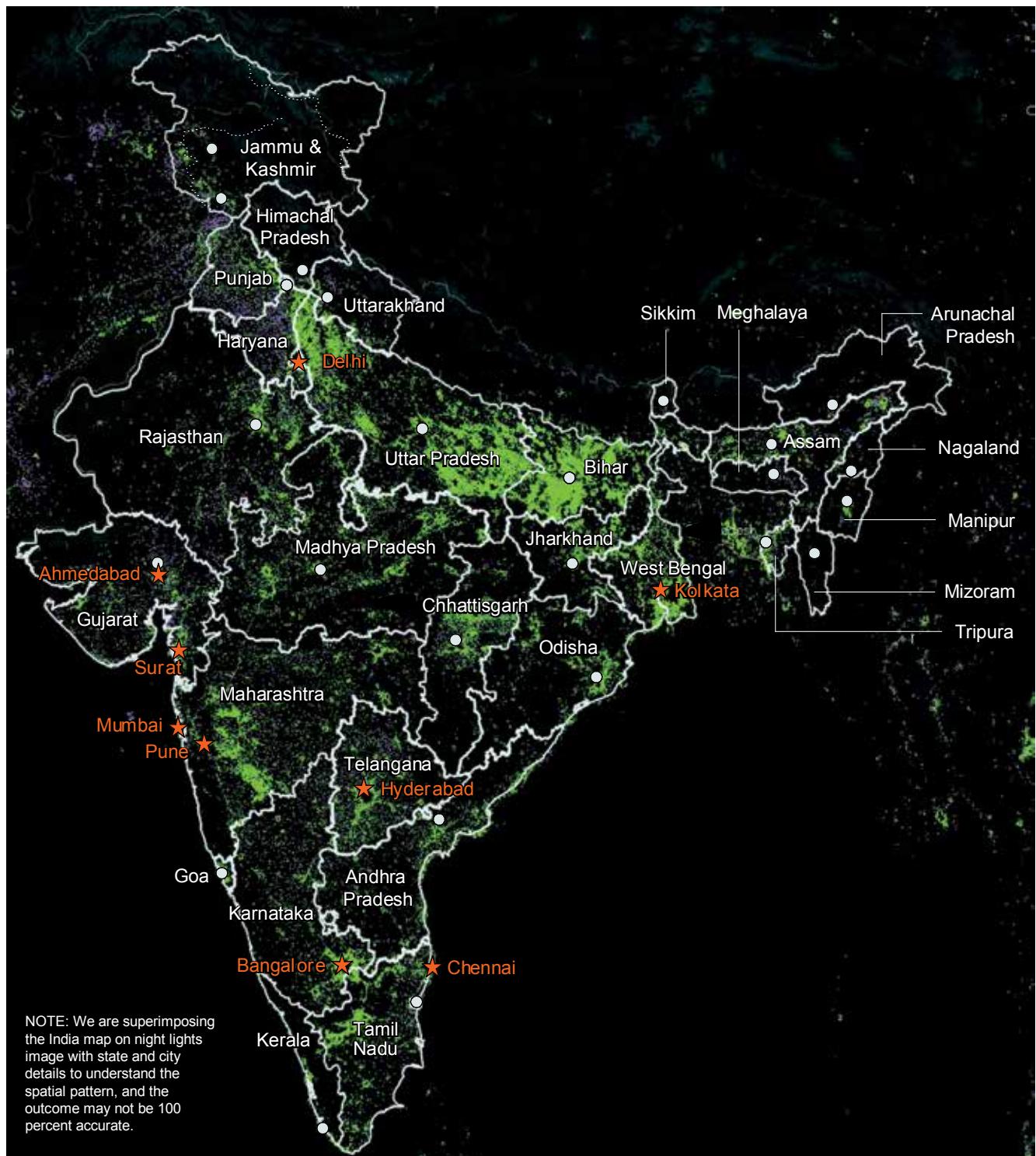
²⁷ Taking 2014–17 to keep it consistent with our earlier analyses.

²⁸ Villages which have more than 10 percent of households having access to electricity through the established infrastructure.

Exhibit 6

A “night lights” view of India highlights infrastructure and economic development

● Increase in brightness 2016 vs. 2012 ● Reduced brightness 2016 vs. 2012 ● Capital city 2016 vs. 2012 ★ City with population >4 million

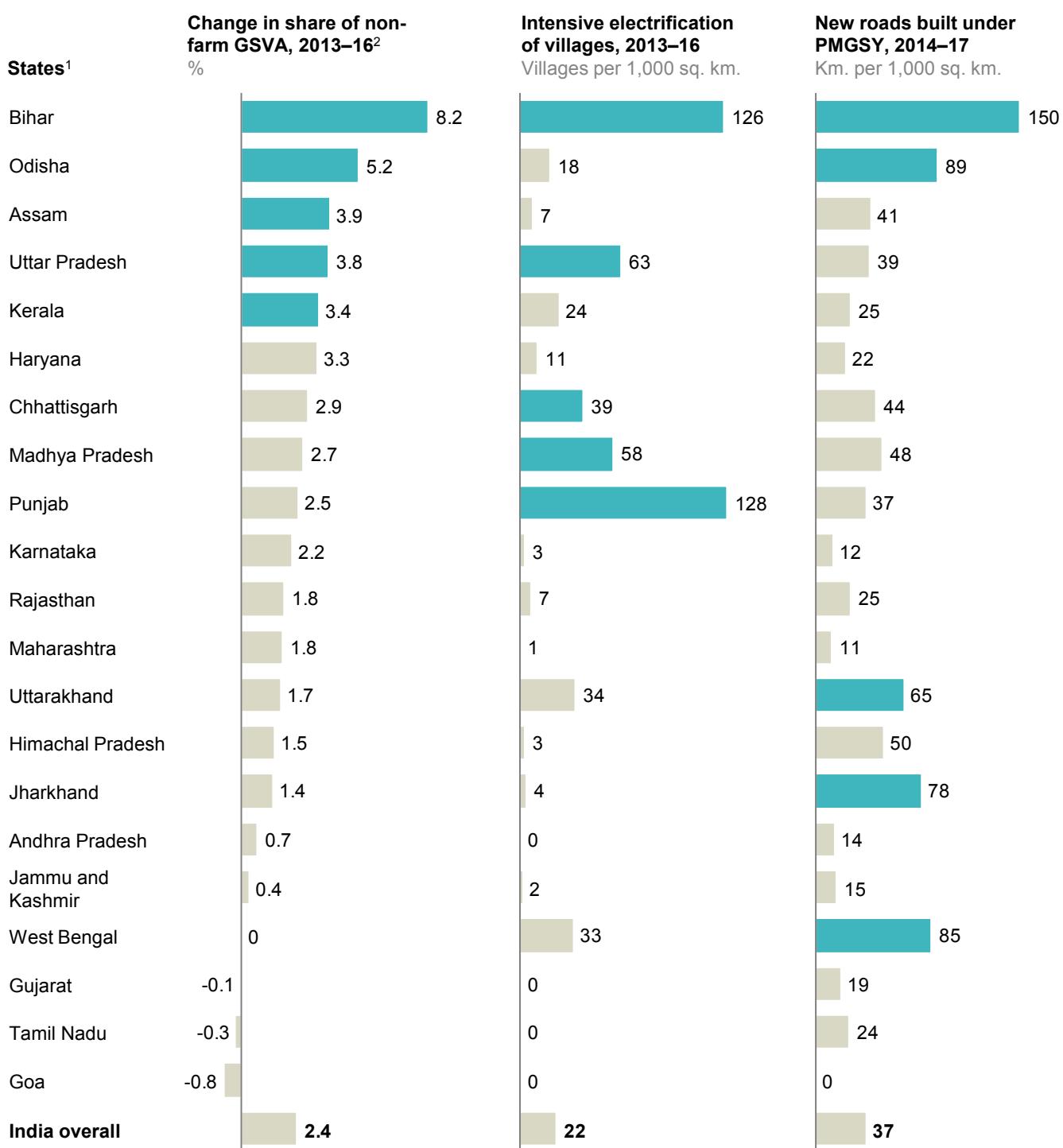


NOTE: Placement of city markers is approximate.

SOURCE: John Nelson, ESRI; NASA; McKinsey Global Institute analysis

Exhibit 7

Improvement in brightness: some key factors



1 Excluding the states Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Telangana, and Tripura.

2 Change in share of non-farm GSVA (gross state value added) for 2013 to 2015 has been used for Rajasthan, Himachal Pradesh, Punjab, and Maharashtra since 2016 data is not available.

SOURCE: Rural Electrification Corporation Annual reports; Pradhan Mantri Gram Sadak Yojana (PMGSY) Online Management Monitoring and Accounting System (OMMAS); Central Statistical Organization; McKinsey Global Institute analysis

AUTOMATION AND KNOWLEDGE-INTENSIVE WORK

The global perspective

Technological change has reshaped the workplace continually over the two-plus centuries since the Industrial Revolution, and the speed with which automation technologies such as robotics and artificial intelligence are developing today is remarkable. These technologies hold the promise of very substantial productivity and performance gains for both companies and national economies, but the scale at which they could disrupt the workplace is raising broad questions and fears in the public debate over automation. MGI research on the automation potential of the global economy has examined more than 2,000 work activities and quantified the technical feasibility of automating each of them. While we find that only very few occupations, less than 5 percent, could be fully automated by adapting currently demonstrated technologies, partial automation is more likely: about 60 percent of all occupations have at least 30 percent of activities that are automatable by adapting current technologies.²⁹ Types of work most susceptible to automation include not only physical activity in predictable environments, but also data collection and processing. Workers may experience wage pressure, unless demand for the occupation grows more than the expansion in labour supply. These new technologies will require people to interact more closely with machines in the future, and in some areas they are already creating a demand for new types of skills. For example, the rise of data analytics could lead to a shortfall of up to 250,000 data scientists in the United States alone in a decade.³⁰

The Indian perspective

Our research suggests that India's workers have a technical automation potential—the overall share of activities that can be automated by adapting currently demonstrated technologies—of 52 percent. This is broadly in line with the global trend, and comparable to 51 percent in China and 55 percent in Japan.³¹ However, the technical feasibility of automating work does not directly translate into the deployment of automation in the workplace. Technical potential is only the first of several elements that must be considered. Other factors play a role, including the cost of developing and deploying both the hardware and the software for automation, the cost of labour vs. the benefits of automation, and regulatory and social issues. Taking into account these factors, our scenarios suggest that in many countries it may take at least two decades or more before automation reaches 50 percent of all of today's work activities (Exhibit 8). In India's case, the relatively low level of wages compared with those in advanced countries and the cost of automation may mean that the business case for adopting and implementing automation technologies is less compelling in many sectors, and that adoption in aggregate could take longer.

However, the impact of automation is already being felt in India's information technology sector—a digital leader—as well as in financial services and capital- and knowledge-intensive manufacturing areas such as automotive and oil and gas. Artificial intelligence and machine learning have been increasingly used to execute tasks such as planning, scheduling, and optimisation, and some low- and medium-skill jobs have already been affected.³² Jobs in the IT sector have been growing at 6 to 6.5 percent per year since 2012, and revenue has grown faster than jobs (at 9 percent per year).³³ This is a natural phenomenon as automation boosts worker efficiency and coders move to higher-value-added work.

²⁹ *A future that works: Automation, productivity, and employment*, McKinsey Global Institute, January 2017.

³⁰ *The age of analytics: Competing in a data-driven world*, McKinsey Global Institute, December 2016.

³¹ *A future that works: Automation, productivity, and employment*, McKinsey Global Institute, January 2017.

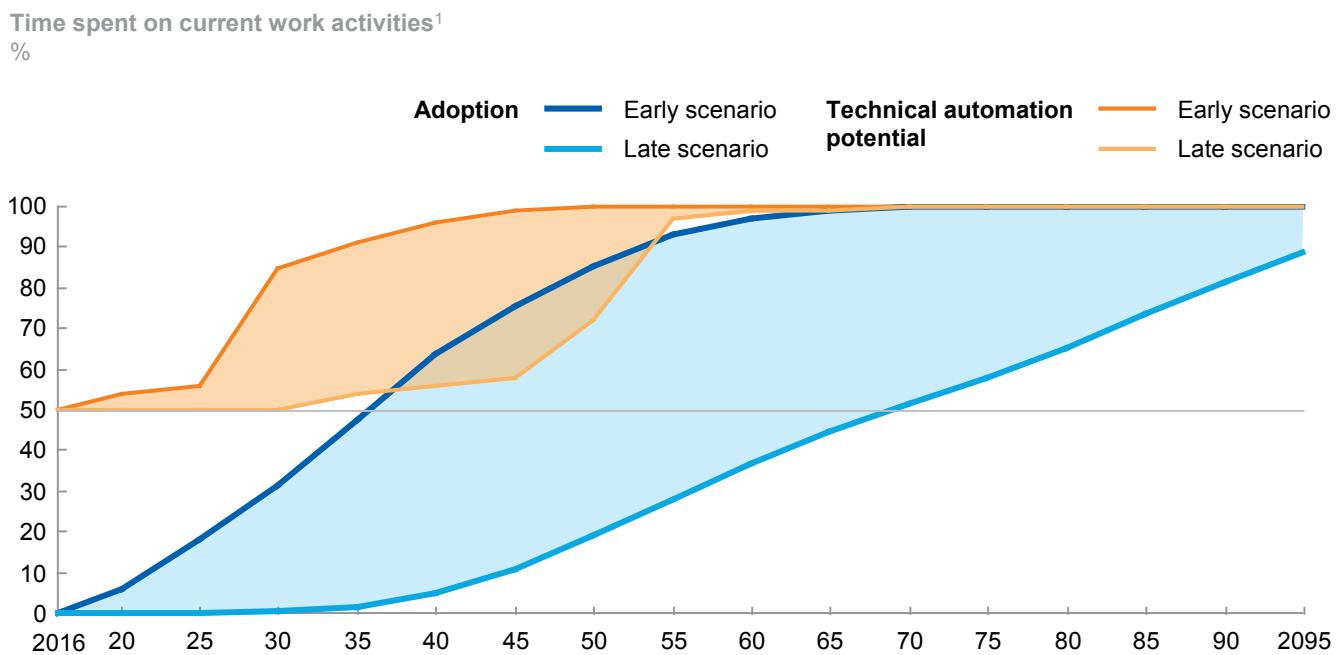
³² The issue has been widely covered in the Indian media. See, for example, Surabhi Agarwal and Prachi Verma, "Indian IT goes slow on hiring, 20–25% likely reduction in jobs over 3 yrs", *Economic Times*, February 20, 2017.

³³ *Jobs and skills: The imperative to reinvent and disrupt*, NASSCOM, May 2017; *Indian IT-BPM industry—FY2013 performance review, FY2014 outlook*, NASSCOM, February 2013.

Net hiring remains positive in India's IT industry. From 2014 to 2017, data from the industry association NASSCOM suggest, the IT and business process outsourcing sectors created between 550,000 and 600,000 incremental direct jobs.³⁴ Opportunities for higher-value work and better pay for trained workers—essential aspects of gainful employment—continue to flourish. The accelerated trend of digital adoption is driving up worldwide IT spending. NASSCOM expects the revenues of Indian IT companies to rise to \$350 billion in 2025. Even as worker productivity grows further, the sector could add some 2.5 million to three million new jobs by 2025.³⁵ Besides IT and business process outsourcing, other sectors in manufacturing, financial services, and retail are investing in automation and digital, creating opportunities for technology-trained workers.

Exhibit 8

Automation will be a global force, but adoption will take decades and there is significant uncertainty on timing



¹ Forty-six countries used in this calculation, representing about 80% of global labour force.

SOURCE: McKinsey Global Institute analysis

However, the skill level required is rising as a result of automation. The challenge lies in retraining the workforce and providing workers with the new skills they need as quickly as they are required—no small feat given the rapid advances in automation technologies. The share of next-generation jobs, in fields such as cybersecurity, mobile app development, new user interfaces, social media, data science, and platform engineering, is rising. All of these jobs require new skills, including the ability to create, manage, or interpret big data analytics, cloud and cybersecurity services, service delivery automation, robotics, artificial intelligence, machine learning, and natural language processing.

³⁴ *Jobs and skills: The imperative to reinvent and disrupt*, NASSCOM, May 2017; *Indian IT-BPM Industry—the transformation catalyst*, NASSCOM, 2014.

³⁵ *Perspective 2025—shaping the digital revolution*, NASSCOM, February 2016. ASSOCHAM estimates suggest the sector could add 5.5 million employees by 2022, of which about one million have been added in the past three to four years. “These sectors will be the biggest job creators for India in the near future”, *Business Standard*, June 4, 2017.

NASSCOM expects its reskilling initiatives to translate into 1.5 million to two million people working on next-generation technologies in India within four to five years.³⁶ To expand gainful employment in the face of rising automation implies that not just IT but every sector, including manufacturing, trade, health care, and financial services, will likewise need to prepare for massive retraining and skill building.

NEW DIGITAL ECOSYSTEMS AND INDEPENDENT WORK

The global perspective

While independent work is nothing new (and self-employment is still the predominant form of work in emerging economies), its scale is larger than previously imagined. MGI research finds that 20 to 30 percent of the working-age population in the United States and the European Union is engaged in independent work.³⁷ Just over half of these workers supplement their income and have traditional jobs, or are students, retirees, or caregivers. While 30 percent turn to independent work out of necessity because they cannot find either a traditional job or one that meets their income and flexibility needs, 70 percent choose this type of work out of preference. Those who pursue independent work out of preference are generally satisfied, while those who pursue it out of necessity are unsatisfied with the income variability and the lack of the benefits typically associated with traditional work. Digital technology enables independent work and new forms of entrepreneurial activity. Only about 15 percent of independent work is conducted on digital platforms, such as Uber, Etsy, Didi, and others, but this share is growing rapidly globally, driven by the scale, efficiency, and ease of use for workers and customers that such platforms enable.

The Indian perspective

As Internet penetration and data usage grow, there has been an explosion of digitally enabled ecosystems and growth in work opportunities across sectors such as retail, transport, financial services, and health care (Exhibit 9).

Exhibit 9

Significant progress has been made in digital access and adoption between 2014 and 2017¹

50% year-on-year increase in number of smartphones per 100 people, up from 6 to 19	142% year-on-year increase in mobile data consumption per subscriber	3x increase in share of Indian population using e-commerce , from 3% to 10%	17x increase in online banking transactions per Internet user	200% year-on-year increase in number of digital wallet transactions per Internet user
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¹ 2014 indicates FY2014 from April 2013 to March 2014; 2017 indicates FY2017 from April 2016 to March 2017.

SOURCE: Strategy Analytics; TRAI; We are Social, RBI payment systems indicators; McKinsey Global Institute analysis

There are valid concerns about the net effect on employment growth, but there is also little doubt that digital ecosystems are creating new opportunities for better quality work, and more remunerative work, for a segment of the workforce. For example:

- Cab-hailing app-based companies such as Uber and Ola have about 700,000 vehicles in operation in 2017, up from 300,000 in 2015, according to our estimates. This means commensurate growth in work opportunities, which are projected to rise to one million by 2018, based on the industry's current trajectory. Uber reportedly estimates that its drivers can earn 1,500 rupees to 2,500 rupees (\$23 to \$38) per day, or 40 to

³⁶ *Jobs and skills: The imperative to reinvent and disrupt*, NASSCOM, May 2017.

³⁷ *Independent work: Choice, necessity, and the gig economy*, McKinsey Global Institute, October 2016.

50 percent more than they would earn otherwise.³⁸ For many drivers, the quality of work—a significant aspect of gainful employment—is perceived to be better. This is not only due to the increase in income, but also to benefits such as subsidised health and life insurance and assistance for negotiating better prices for car maintenance and parts. In addition, better cash-flow management capability comes from receiving digital payments rather than currency, on a weekly basis rather than every day, and from using a digital system to keep track of work done and money received. There are areas where work arrangements can improve. For example, drivers complain about lack of full transparency on incentives and penalties and say the rapid rise in the number of drivers on these platforms has led to a reduction in work opportunities for those already registered and active.³⁹ Research needs to be done on the effect on gainful employment of drivers using these apps, as the range in driver experience can be wide.

- E-commerce players, including companies such as Amazon and Flipkart, as well as a host of category specialists including furniture manufacturers, fashion retailers, and food delivery businesses, are creating new types of jobs in areas of India that have so far been less covered by the formal economy. Expert estimates suggest that e-commerce retail shipments grew by an annual average 40 percent between 2014 and 2016. The number of workers directly employed in e-commerce is estimated to have grown at 40 to 50 percent per year between 2012 and 2016, rising from some 20,000 jobs to over 100,000. Three-fourths of the new work opportunities are in logistics and transport, where the wages of a worker with a middle-school education can be as much as 80 percent higher than in agriculture. Crucially, as much as 50 to 60 percent of e-commerce job growth is in smaller urban centres (so-called Tier II and Tier III towns with populations of 500,000 to four million) where job opportunities have been scarcer in the past.⁴⁰ Growth has been taking place in the startup space beyond just e-commerce. India is the third largest technology-driven startup base globally, after the United States and the United Kingdom. In 2016, it had more than 4,750 startups, of which more than 2,700 were added in 2015 and 2016.⁴¹ The same trend is visible in the growth of office space in India, which grew at an average rate of about 10 percent between 2012 and 2016.⁴²
- Digital financial services have been fuelled by the government's JAM trinity programme. The government's financial inclusion drive, the added impetus of demonetisation, and the explosive growth of digital payments infrastructure have contributed to create thousands of improved work opportunities. Banking correspondents (BCs), or networks of individuals acting as customer service points for basic banking services in underserved regions, are one example. The Reserve Bank of India's data suggest that BCs provided financial services at 637,000 locations in 2016, up from 399,000 in 2014.⁴³ Such growth could translate into additional work for an equivalent number of people or more (assuming at least one person per location). These would not necessarily be new jobs, but would be incremental income-earning opportunities for existing workers in other occupations. As in the case of cab-hailing companies, it could be a move towards more gainful work. BCs are part of an organised value chain, and they receive help in acquiring basic digital and financial literacy. They also experience at least

³⁸ Sunny Sen, "Uber clears air on falling driver income, pegs per day earning at Rs 1,500–2,500", *Hindustan Times*, March 3, 2017.

³⁹ "Uber-Ola drivers' strike fizzles out, but a bigger row may resurface soon", *Business Standard*, February 22, 2017.

⁴⁰ *India's urban awakening: Building inclusive cities, sustaining economic growth*, McKinsey Global Institute, April 2010.

⁴¹ *Indian startup ecosystem maturing*, NASSCOM, 2016.

⁴² "Office space in fast lane", *Times of India*, June 10, 2017.

⁴³ *Financial inclusion: Policy and progress*, Reserve Bank of India, December 29, 2016; *Credit delivery and financial inclusion*, Reserve Bank of India, August 27, 2015.

some of the management, training, and learning inputs associated with working in the organised sector.

- Microentrepreneurship—part of the global trend towards independent work—is being enabled by initiatives such as the Micro Units Development and Refinance Agency, or MUDRA, the government’s small entrepreneur financing programme. Almost 35 million new loans were sanctioned under the MUDRA scheme in 2016.⁴⁴ This programme could create not only self-employment for small entrepreneurs receiving the loans but also indirect employment of 0.2 to 0.5 times the number of loans.⁴⁵ Not all this would be incremental over the earlier years, as small loans were sanctioned previously as well, but government data suggest that of the 35 million new loans, some 36 percent (or 12.6 million loans) were disbursed to first-time entrepreneurs, resulting in work opportunities for 15 million to 19 million people. Given that this programme is recent, the efficacy and viability of these loans should be explored, and the exact number of beneficiaries verified. The rise of self-help groups is also creating gainful employment. According to data from the National Bank for Agriculture and Rural Development, loans to self-help groups (largely women-oriented collectives with ten to 12 members each) rose 35 percent in 2015–16, and loans were made to some two million, with approximately 20 million to 24 million members.⁴⁶ As well as linking members to banks for production and business-related loans, self-help groups help train and build capacity of members and facilitate their micro-livelihoods plans. They also propagate awareness on social issues including alcoholism, child marriage, child labour, dowry, gender discrimination, and domestic violence. Studies show that programme participants perceived high ratings on women empowerment, self-esteem enhancement, personality development, reduced social tensions, increase in livestock production, and the reduction of high-cost debt.⁴⁷ More research is needed on the impact of microentrepreneurship loans on the productivity and earnings of workers. This can be achieved through well-structured longitudinal surveys of MUDRA and self-help group loan beneficiaries.

3. CREATING OPPORTUNITIES FOR MORE GAINFUL EMPLOYMENT: SOLUTION SPACES

A wide range of initiatives, both government-led and undertaken by the private sector, can help increase gainful employment in India. In this final section, we look at three areas with considerable potential: more appropriate statistical measurement of employment; establishing targeted government programmes to stimulate gainful employment; and removing hurdles standing in the way of investment and innovation. These are not detailed strategies or plans, but rather solution spaces that could be considered, based on current and past labour market trends.

DEVELOPING BETTER MEASURING TOOLS TO OPTIMISE EMPLOYMENT

India can design and implement a 21st-century labour market assessment system that measures gainful employment and workforce advancement in a more holistic way, using a modern data-collection approach. One idea would be to introduce a full-fledged labour market employment survey conducted on a quarterly basis, with seasonal adjustments to enable annual estimation, and with a sample size at least as large as the annual survey. The recent announcement that NITI Aayog (a government think tank, the National Institute for

⁴⁴ Annual report 2015–16, Micro Units Development and Refinance Agency (MUDRA) Bank.

⁴⁵ Based on data from *National Sample Survey, 2010–11 (67th round)*, Ministry of Statistics and Programme Implementation.

⁴⁶ *Status of microfinance in India 2015–16*, National Bank for Agriculture and Rural Development.

⁴⁷ *Independent assessment of design, strategies, and impacts of DAY-NRLM*, Institute of Rural Management Anand, May 2017.

Transforming India) will conduct a quarterly household survey, across both urban and rural areas, to estimate the number of employed and unemployed people in the country is a step in this direction. Panel survey designs can help ensure that, for at least part of the sample, households and individuals who were interviewed during previous rounds are interviewed again, in order to assess social mobility and advancement.

Wages and incomes could be more comprehensively measured and harmonised with the consumption surveys. Similarly broader harmonisation of the periods and definitions across multiple surveys (such as the economic census, the annual survey of industry, labour market surveys, wage and price data collection, as well as the consumption surveys) would enable more meaningful interpretation. Time-use surveys are essential to capture how much work is obtained and how time is allocated, including across specific tasks, paid work, and unpaid work. A modernisation of occupational definitions would be needed to reflect changes in the job market. Specific labour segments can be covered more deeply; for instance, an annual higher education graduate survey could cover graduates of selected disciplines (such as engineering) over a 10- to 15-year period to understand job experience and socioeconomic mobility. This would also provide valuable feedback for educational institutions.

State-of-the-art data collection methodologies and surveying tools can be deployed in the labour field, with digitally enabled registration, data recording, verification processes, and speedy release of unit-level open data. Analysis of high-frequency digital data as proxy indicators—such as the activity levels for specific occupations on job search portals, or analysis of labour-intensive economic activities using data from the Goods and Service Tax network once it comes on stream—can be considered.

An ILO study on the labour statistics system in India has acknowledged the need for many of these steps.⁴⁸ It suggests conducting a comprehensive employment and unemployment survey on a quarterly basis, rather than a limited exercise focusing largely on the urban sector, covering detailed aspects of wages and income. It also suggests redefinition of occupations, regular time-use surveys, and surveys to capture earnings of the self-employed in more detail. The study also calls for strengthening the statistical machinery at the state level, digitising the process of collecting and handling statistics, and posting survey results online to streamline the collection of data.

India can find models in labour market statistical approaches in other countries, even if the labour conditions such as underemployment or informal employment may differ. The Bureau of Labor Statistics in the United States undertakes comprehensive and frequent employment surveys.⁴⁹ These are conducted monthly, with a sample size of some 60,000 households (equivalent to a sample of 250,000 in India, which is roughly double the size of samples currently). The same households are surveyed for four months in a row and then one more time the following year to ensure stability from a longitudinal perspective. The surveys also try to infer details about the extent of employment by covering the number of hours worked, and by recording how many jobs each sampled person has. The Egypt Labour Market Panel Survey, carried out by the Economic Research Forum in cooperation with Egypt's Central Agency for Public Mobilisation and Statistics, is a longitudinal survey that allows for the study of labour market trajectories over time through the panel design, as well as a large number of retrospective questions about an individual's employment history. It draws distinctions between market and subsistence work, asking separate questions about the desire to work, availability for work, and search behaviour, as well as the

⁴⁸ T.S. Papola, *An assessment of the labour statistics system in India*, International Labour Organization, 2014.

⁴⁹ See *How the government measures unemployment*, Bureau of Labor Statistics, www.bls.gov/cps/cps_htgm.htm#employed.

characteristics of employers, such as size, legal form, formality status, export orientation, and degree of reliance on tourism.⁵⁰

ESTABLISHING TARGETED PROGRAMMES TO STIMULATE GAINFUL EMPLOYMENT

The government can work with the private sector to shape and execute targeted programmes to stimulate gainful employment across segments of the workforce. As we observe, for the poorest, the transition will be from agriculture to construction, transport, and potentially trade. Jobs in hotels and hospitality also have large potential to grow. The manufacturing sector could present further job creation opportunities. Targeted interventions to build job creation engines could capitalise on these urbanisation themes, for example:

- Accelerating establishment of industrial townships that provide tailor-made infrastructure that supports a cluster of companies in similar industries. These can be manufacturing clusters, but they could also be developed around financial services, education, medical services, technology, or other types of innovation. Proximity of companies within such townships creates efficiencies, knowledge transfer, and higher labour productivity, attracting investment and creating jobs across the value chain, from construction to manufacturing, logistics, and R&D.
- Manufacturing in India needs to grow significantly faster than overall growth; few other sectors have the same potential to lift millions out of poverty and provide gainful employment. Global manufacturing seems to need India, too. China's move up the manufacturing value chain has created a vacuum in the production of labour-intensive, low- and medium-value-added manufactured goods. Although Bangladesh, Cambodia, Vietnam, and other nearby countries have already moved ahead in capturing labour-intensive jobs, they cannot fill the entire vacuum created by China. India's manufacturing competitiveness can evolve on the back of programmes such as Sagarmala, a project to promote port-based industrialisation through 14 coastal economic zones, which can enable better use of India's 7,500 kilometres of coastline and waterways to cut trade costs. Government estimates suggest that the programme could lead to annual logistics cost savings of nearly 350 billion rupees (\$5.4 billion), increase India's merchandise exports to \$110 billion by 2025, and create ten million new jobs. The plan is to have production clusters with affordable housing, connected to ports and the hinterland through a network of efficient multimodal logistics and distribution networks, and with an enabling regulatory framework and systems (for example, less red tape, operating procedures for trade to be streamlined and digitised to ensure low turnaround time of ships at the ports, automatic clearance of container trade, and a risk-based inspection regime).⁵¹
- Government should continue to drive development of tourism circuits as clusters of tourist attractions, supplemented by hotels, restaurants, and recreational activities, and connected by road, rail, and air links, with reliable power supplies, clean drinking water and sanitation, and local populations skilled at meeting travellers' demand for goods and services. The tourism sector is labour-intensive, creating jobs that are well suited to those moving up from the lower rungs of society and causing positive spillover effects in the informal economy. The implementation of a tourism circuit could be undertaken through a special-purpose vehicle designed to achieve sharply defined outcomes through end-to-end planning and tracking.

⁵⁰ Ragui Assaad and Caroline Kraftt, *The Egypt labor market panel survey: Introducing the 2012 round*, The Economic Research Forum, working paper 758, June 2013.

⁵¹ *Sagarmala: Building gateways of growth, National Perspective Plan*, Ministry of Shipping, Government of India, April 2016.

REMOVING HURDLES IN THE WAY OF INVESTMENT AND INNOVATION

For India to maintain the pace of gainful employment growth, it must achieve broad-based, sustainable, and fast economic growth. India's GDP growth for the latest quarter ending March 2017 has been estimated by the Central Statistical Office at just 6.1 percent, attributable to weakness in private investment, the shock of demonetisation, and limited global demand. The World Bank projects the country's GDP growth will rise to 7.2 percent in 2018 and to 7.7 percent in 2020, underpinned by a recovery in private investments.⁵²

To achieve such growth rates, government will need to work with business leaders to implement reforms such as resolution of stressed assets in the financial system, executing infrastructure projects faster, pursuing a smooth rollout of the Goods and Sales Tax, and reducing the cost of doing business by streamlining and digitising operating and administrative procedures, including those relevant for the labour market.

The digital economy could unlock work opportunities, autonomy, and flexibility for millions of workers. Cross-sector collaboration can be pursued between government and industry to remove barriers to digital adoption in several underdigitised sectors and business chains, such as health care, education, and agriculture. This collaboration would aim to expand the ability of workers to access scarce knowledge and generally help them harness digital technologies to become more productive.

Reaping greater gains from investment in skill building under various national initiatives would be critical, both for new labour force entrants and existing workers. For this, India needs to address demand-supply mismatches and lack of detailed information about geography-specific employment opportunities. It will also need to tackle challenges such as low awareness and aspiration, high dropout rates during training, inadequate employer linkages, and a passive approach to seeking employment—all of which result in high attrition rates in the first few months of employment. Demand-driven models for skills training, with the curriculum designed to resolve common points of failure for employers, can help establish a higher return on investment for skills training programmes and could result in more sustainable benefits to both workers and employers.

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Some segments of India's 460-million-strong workforce have been reaping benefits from the resumption of strong GDP growth, the increasing shift into non-farm employment, and the country's high-tech prowess—but tens of millions more could also do better. Indians aspire to higher pay, better and more productive working conditions, and safer, cleaner, and more stimulating work. A new emphasis on gainful employment would help Indians meet these aspirations. It will require a conscious effort on the part of the government, including in terms of measuring employment more holistically, targeting spending on initiatives, and changing regulation of private-sector investment and innovation to remove barriers to gainful employment. While these and other possible policy steps are challenging, the effort and energy required to put them in place will be amply rewarded if they achieve their end goal of a more fulfilled, better rewarded, and more productive Indian workforce.

⁵² *South Asia Economic Focus, Spring 2017: Globalization backlash*, World Bank, 2017.

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